

Remarks/Arguments

Reconsideration of the above-identified application in view of the following remarks is respectfully requested. By the present amendment, claim 1 is amended. New claim 15 has been added.

Claim Rejections under 35 U.S.C. §102

Claims 1-14 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,026,295 to Lieberman (hereafter "Lieberman"). It is respectfully submitted that, as amended, claim 1 patentably defines over Lieberman and is therefore allowable.

Amended claim 1 recites an apparatus for cutting bone that includes a shaft member which extends between a proximal end portion and a distal end portion. The shaft member, proximal end portion and distal end portion extend substantially along a central axis. The proximal end portion has a first surface adapted to receive repetitive impacts. The distal end portion includes a cutting blade adapted to cut through the bone.

Lieberman does not teach or suggest a first surface of a proximal end portion adapted to receive repetitive impacts. Lieberman teaches that a surgical knife 30 includes a handle 32 made of a hollow rigid material and including an end aperture 35 for facilitating the handling or gripping of the surgical knife 30 by the surgeon (Col. 3, lines 51-55 and Fig. 3). A surface having an aperture is clearly not a surface adapted to receive repetitive impacts.

Furthermore, no part of the handle 32 is repetitively struck with an implement during the surgical procedure. Rather, the handle 32 has a solid construction having

a suitable cross-section which may be easily gripped by the surgeon for precision guidance of the instrument (Col. 3, lines 57-60). That is, the surgeon grasps the handle 32 and manually guides the surgical knife 32 during surgery – there is no repetitive impact upon any portion of the knife 32.

Lieberman also does not teach or suggest a cutting blade that is adapted to cut through bone. Rather, Lieberman teaches that the cutting blade 40 can be used to cut, for example, the lens or sclera of an eye, dura mater, skin grafts, cysts, adventitia or dermis (Col. 5, lines 28-52). These are all soft tissue structures. There is no teaching or suggestion, however, that the cutting blade 40 is adapted to cut through bone – a much harder substance than the aforementioned soft tissues. Thus, Lieberman does not teach or suggest a cutting blade adapted to cut through bone. For these reasons, it is respectfully submitted that, as amended, claim 1 patentably defines over Lieberman and is therefore allowable.

Claims 2-7 depend from claim 1 and are allowable for at least the same reasons as claim 1 and for the specific limitations recited therein.

Claim 8 recites an apparatus for cutting cortical bone of a vertebral body comprising an elongate member having a shaft portion extending between a proximal end portion and a distal end portion. The proximal end portion includes a platform adapted to receive repetitive impacts to advance the elongate member along a vertebral body. The distal end portion includes an arcuate cutting blade adapted to cut through the cortical bone of the vertebral body.

As noted previously, Lieberman does not teach or suggest structure adapted to receive repetitive impacts or a cutting blade adapted to cut through bone. Since

Lieberman does not teach or suggest the subject matter of claim 8, it is respectfully submitted that claim 8 patentably defines over Lieberman and is therefore allowable.

Claims 9-14 depend from claim 8 and are allowable for at least the same reasons as claim 8 and for the specific limitations recited therein.

Claims 1-14 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,908,433 to Eager, et al. (hereafter "Eager"). It is respectfully submitted that, as amended, claim 1 patentably defines over Eager and is therefore allowable.

Amended claim 1 recites an apparatus for cutting bone that includes a shaft member which extends between a proximal end portion and a distal end portion. The shaft member, proximal end portion and distal end portion extend substantially along a central axis. The proximal end portion has a first surface adapted to receive repetitive impacts. The distal end portion includes a cutting blade adapted to cut through the bone.

Eager does not teach or suggest a shaft member, proximal end portion and distal end portion that extend substantially along a central axis, the distal end portion including a cutting blade. Eager teaches a surgical knife 20 which includes a tubular handle 21 coupled to a blade holder 40 via an adapter 32. The blade holder 40 has a pair of prongs 50, 51, for guiding a blade 44 into a surgical site. The blade holder 40 is curved to allow the surgeon to easily insert the holder 40 into an incision I (Col. 2, lines 58-60 and Fig. 1). Thus, as is clear from Figs. 3-4, the portion of the blade holder 40 which holds the blade 44 extends along an axis that is angled substantially relative to the axis along which the handle 21 extends. Accordingly,

Eager does not teach or suggest a shaft member, proximal end portion and distal end portion that extend substantially along a central axis, the distal end portion including a cutting blade.

Eager also does not teach or suggest a first surface adapted to receive repetitive impacts. As shown in Fig. 1, Eager teaches that the surgeon grips the handle 21 of the surgical knife 20 and directs the blade 44 manually through the incision I and to the surgical site SS. Thus, no portions of the surgical knife 20 are repetitively impacted. Therefore, Eager also does not teach or suggest a first surface adapted to receive repetitive impacts.

Eager also does not teach or suggest a cutting blade adapted to cut through bone. Rather, Eager teaches a blade 44 that is used in carpal tunnel release surgeries for cutting the carpal ligament 52 (Fig. 1) in a patient's hand. Ligaments are soft tissue structures. There is no teaching or suggestion, however, that the blade 44 is adapted to cut through bone – a much harder substance than a ligament. Thus, Eager does not teach or suggest a cutting blade adapted to cut through bone. For these reasons, it is respectfully submitted that, as amended, claim 1 patentably defines over Eager and is therefore allowable.

Claims 2-7 depend from claim 1 and are allowable for at least the same reasons as claim 1 and for the specific limitations recited therein.

Claim 8 recites an apparatus for cutting cortical bone of a vertebral body comprising an elongate member having a shaft portion extending between a proximal end portion and a distal end portion. The proximal end portion includes a platform adapted to receive repetitive impacts to advance the elongate member

along a vertebral body. The distal end portion includes an arcuate cutting blade adapted to cut through the cortical bone of the vertebral body.

As noted previously, Eagle does not teach or suggest a first surface adapted to receive repetitive impacts or a cutting blade adapted to cut through bone. Since Eagle does not teach or suggest the subject matter of claim 8, it is respectfully submitted that claim 8 patentably defines over Eagle and is therefore allowable.

Claims 9-14 depend from claim 8 and are allowable for at least the same reasons as claim 8 and for the specific limitations recited therein.

Claims 1-14 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,827,311 to Berelsman, et al. (hereafter "Berelsman"). It is respectfully submitted that, as amended, claim 1 patentably defines over Berelsman and is therefore allowable.

Amended claim 1 recites an apparatus for cutting bone that includes a shaft member which extends between a proximal end portion and a distal end portion. The shaft member, proximal end portion and distal end portion extend substantially along a central axis. The proximal end portion has a first surface adapted to receive repetitive impacts. The distal end portion includes a cutting blade adapted to cut through the bone.

Berelsman does not teach a shaft member, proximal end portion and distal end portion that extend substantially along a central axis, the distal end portion including a cutting blade. Berelsman teaches a tunnel ligament tome 7 that includes a handle 10 and a stem 16, which includes an elongated section 28. The elongated section 28 is angled with respect to the handle 10 to facilitate the approach and entry

of the ligament tome 7 into the small wound 30 (Col. 3, lines 17-21 and Fig. 5). The stem 16 further includes a cutting head 32 for receiving a blade 70. Thus, as is clear from Fig. 1, the portion of the cutting head 32 which receives the blade 70 extends along an axis that is angled substantially relative to the axis along which the handle 10 extends. Accordingly, Berelsman does not teach or suggest a shaft member, proximal end portion and distal end portion that extend substantially along a central axis, the distal end portion including a cutting blade.

Berelsman also does not teach or suggest a first surface adapted to receive repetitive impacts. Berelsman teaches that the surgeon grips the handle 10 to manually move the tome 7 through the established pathway toward the patient's wrist to completely divide the carpal ligament 31 (Col. 5, lines 15-18). Thus, the surgeon's wrist guides the tome 7 manually – no portion of the tome 7 is repetitively impacted. Accordingly, Berelsman also does not teach or suggest a first surface adapted to receive repetitive impacts.

Berelsman also does not teach or suggest a cutting blade adapted to cut through bone. Rather, Berelsman teaches that the tome 7 is moved through an established pathway proximally toward a patient's wrist to completely divide the carpal ligament 31 with the blade 70 (Col. 5, lines 15-18 and Fig. 7). Ligaments are soft tissue structures. There is no teaching or suggestion, however, that the blade 70 is adapted to cut through bone – a much harder substance than a ligament. Thus, Berelsman does not teach a cutting blade adapted to cut through bone. For these reasons, it is respectfully submitted that, as amended, claim 1 patentably defines over Berelsman and is therefore allowable.

Claims 2-7 depend from claim 1 and are allowable for at least the same reasons as claim 1 and for the specific limitations recited therein.

Claim 8 recites an apparatus for cutting cortical bone of a vertebral body comprising an elongate member having a shaft portion extending between a proximal end portion and a distal end portion. The proximal end portion includes a platform adapted to receive repetitive impacts to advance the elongate member along a vertebral body. The distal end portion includes an arcuate cutting blade adapted to cut through the cortical bone of the vertebral body.

As noted previously, Berelsman does not teach or suggest a first surface adapted to receive repetitive impacts or a cutting blade adapted to cut through bone. Since Berelsman does not teach the subject matter of claim 8, it is respectfully submitted that claim 8 patentably defines over Berelsman and is therefore allowable.

Claims 9-14 depend from claim 8 and are allowable for at least the same reasons as claim 8 and for the specific limitations recited therein.

Claims 1-14 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,507,800 to Strickland (hereafter "Strickland"). It is respectfully submitted that, as amended, claim 1 patentably defines over Strickland and is therefore allowable.

Amended claim 1 recites an apparatus for cutting bone that includes a shaft member which extends between a proximal end portion and a distal end portion. The shaft member, proximal end portion and distal end portion extend substantially along a central axis. The proximal end portion has a first surface adapted to receive

repetitive impacts. The distal end portion includes a cutting blade adapted to cut through the bone.

Strickland does not teach or suggest a proximal end portion which has a first surface adapted to receive repetitive impacts. Strickland teaches a tome 50 having a handle 51 and a cutting head 52. The cutting head 52 includes a blade 53 having a cutting edge 56. The handle 51 is streamlined and contoured to provide a better fit for the surgeon's hand and, particularly, to improve the purchase of the index finger and thumb as the tome 50 is gently pushed to divide a carpal ligament 42 (Col. 4, lines 21-25). Thus, the handle 32 is grasped by the surgeon and slowly pushed to guide the tome 50 – no portion of the tome 50 is repetitively impacted. Accordingly, Strickland does not teach or suggest a proximal end portion which has a first surface adapted to receive repetitive impacts.

Strickland also does not teach or suggest a cutting blade adapted to cut through bone. Rather, Strickland teaches that the tome 50 is moved through an established pathway held open by a self-retracting instrument 30 proximally toward a patient's wrist to completely divide the deep transverse carpal ligament 42 with the cutting edge 56 of a blade 53 (Col. 7, lines 50-67 and Fig. 6-8). Ligaments are soft tissue structures. There is no teaching or suggestion, however, that the blade 53 is adapted to cut through bone – a much harder substance than a ligament. Thus, Strickland does not teach or suggest a cutting blade adapted to cut through bone. For these reasons, it is respectfully submitted that, as amended, claim 1 patentably defines over Strickland and is therefore allowable.

Claims 2-7 depend from claim 1 and are allowable for at least the same reasons as claim 1 and for the specific limitations recited therein.

Claim 8 recites an apparatus for cutting cortical bone of a vertebral body comprising an elongate member having a shaft portion extending between a proximal end portion and a distal end portion. The proximal end portion includes a platform adapted to receive repetitive impacts to advance the elongate member along a vertebral body. The distal end portion includes an arcuate cutting blade adapted to cut through the cortical bone of the vertebral body.

As noted previously, Strickland does not teach or suggest structure adapted to receive repetitive impacts or a cutting blade adapted to cut through bone. Since Strickland does not teach or suggest the subject matter of claim 8, it is respectfully submitted that claim 8 patentably defines over Strickland and is therefore allowable.

Claims 9-14 depend from claim 8 and are allowable for at least the same reasons as claim 8 and for the specific limitations recited therein.

New Claims

Claim 15 recites that an apparatus for cutting bone comprises a shaft member which extends between a proximal end portion and a distal end portion. The distal end portion includes a cutting blade which extends between a shield section and a guide section. The guide section is substantially narrower in width than the shield section and projects axially beyond the shield section. It is respectfully submitted that the art of record does not teach or suggest this structure.

Lieberman teaches that the cutting end 34 of the surgical knife 30 terminates with a shoe member 36 and a pair of ski members 38, 38 which surround a cutting

blade 40. As shown in Figs. 4-5, the shoe member 36 projects axially beyond both of the ski members 38, 38 and is wider than each ski member 38. Thus, Lieberman does not teach a guide section that is substantially narrower in width than a shield section and projects axially beyond the shield section.

Eager teaches that the blade 44 of the surgical knife 20 is surrounded by a top prong 51 and a bottom prong 50. The bottom prong 50 is longer than the top prong 51 to assist the surgeon in guiding the blade 44 only along the target tissue (Col. 3, lines 22-24). The top prong 51 and bottom prong 50, however, are the same width (Fig. 9). Thus, Eager does not teach or suggest a guide section that is substantially narrower in width than a shield section and projects axially beyond the shield section.

Berelsman teaches that the stem 16 includes a cutting head 32 housing a blade 70. The cutting head 32 includes a first fork 44 and a second fork 56 which together recess the blade 70. The first fork 44 and the second fork 56 each have cross sectional dimensions of approximately 1.5 by 5 mm and the second fork 56 extends beyond the first fork 44 (Col. 3, lines 35-36 and 47-50). Thus, Berelsman does not teach or suggest a guide section that is substantially narrower in width than a shield section and projects axially beyond the shield section.

Strickland teaches that the head portion 12 of the tome 10 includes a blade 13 bounded on one side by a blunt protuberance 17 and on its other side by another, shorter, blunt protuberance 18 (Col. 3, lines 38-42). Both protuberances 17, 18, however, have the same width (Fig. 3). Thus, Strickland does not teach or suggest a guide section that is substantially narrower in width than a shield section and

projects axially beyond the shield section. For these reasons, it is respectfully submitted that claim 15 patentably defines over the art of record and is therefore allowable.

In view of the foregoing, it is respectfully submitted that the above-identified application is in condition for allowance, and allowance of the above-identified application is respectfully requested.

Please charge any deficiency or credit any overpayment in the fees for this amendment to our Deposit Account No. 20-0090.

Respectfully submitted,

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